120. (Amended) An apparatus comprising a copper oxide having a T_c greater than 26°K carrying a superconducting current said copper oxide is maintained at a temperature less than said T_c.

124. (Amended) A device comprising a composition of matter having a T_c greater than 26°K carrying a superconducting current, said composition comprising at least one each of a Group III B element, an alkaline earth, and copper oxide said device is maintained at a temperature less than said T_c.

130. (Added) A superconductive apparatus comprising a composition having a transition temperature greater than 26°K, the composition including a rare earth or Group III B element, a transition metal element capable of exhibiting multivalent states and oxygen, including at least one phase that exhibits superconductivity at temperature in excess of 26°K, a means for maintaining said composition at said temperature to exhibit said superconductivity and means for passing an electrical superconducting current through said composition which exhibiting said superconductivity.

131. (Added) The combination of claim 15, where said additional element is a rare earth or Group III B element.

132. (Added) The combination of claim 12, where said composition includes a substantially perovskite superconducting phase.

133. (Added) The superconducting apparatus of claim 27, where said substituted Cu-oxide includes a rare earth or Group III B element.

134. (Added) The combination of claim 71, where said mixed copper oxide further includes a rare earth or Group III B element.

135. (Added) A combination, comprising:

a mixed copper oxide composition including an alkaline earth element (AE) and a rare earth or Group III B element (RE), said composition having a substantially layered crystalline structure and multi-valent oxidation states, said composition exhibiting a substantially zero resistance to the flow of electrical current therethrough when in a superconducting state at a temperature in excess of 26°K, said mixed copper oxide having a superconducting onset temperature greater than 26°K and,

electrical means for passing an electrical superconducting current through said composition when said composition exhibits substantially zero resistance at a temperature greater than 26°K and less than said onset temperature.

136. (Added) The combination of claim 77, where said crystalline structure is substantially perovskite.

137. (Added) An apparatus comprising:

forming a composition including a transition metal, a rare earth or Group III B element, an alkaline earth element, and oxygen, where said composition is a mixed transition metal oxide having a non-stoichimetric amount of oxygen therein and exhibiting a

superconducting state at a temperature greater than 26°K,

means for maintaining said composition in said superconducting state at a temperature greater than 26°K, and less than said superconducting onset temperature, and

means for passing an electrical current through said composition while said composition is in said superconducting state.

Sub E3 cncld

D1 cncld

138. (Added) The apparatus of claim 93, where said copper oxide material exhibits a substantially layered crystalline structure.

139. (Added) A superconductive apparatus for causing electric-current flow in a superconductive state at a temperature in excess of 26°K, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a substantially layered perovskite crystal structure, the composition having a superconductor transition temperature T_c of greater than 26°K;

Sub J'

(b) means for maintaining the superconductor element at a temperature above 26°K and below the superconductor transition temperature T_c of the superconductive composition; and

(c) means for causing an electric current to flow in the superconductor element.

140. (Added) A superconductive apparatus for conducting an electric current essentially without resistive losses, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a substantially layered perovskite crystal structure, the copper-oxide compound including at least one rare-earth or Group III B element and at least one alkaline-earth element, the composition having a superconductive/resistive transition defining a superconductive/resisitve-transition temperature range between an upper limit defined by a transition-onset temperature T_c and a lower limit defined by an effectively-zero-bulk-resistivity intercept temperature $T_{\rho=0}$, the transition-onset temperature T_c being greater than 26°K;

(b) means for maintaining the superconductor element at a temperature below the effectively-zero-bulk-resistivity intercept temperature $T_{\rho=0}$ of the superconductive composition; and
(c) means for causing an electric current to flow in the superconductor element.

141. (Added) An apparatus comprising a transition metal oxide having a phase therein which exhibits a superconducting state at a critical temperature in excess of 26°K,

a temperature controller maintaining the temperature of said material at a temperature less than said critical temperature to produce said superconducting state in said phase, and

a current source passing an electrical supercurrent through said transition metal oxide while it is in said superconducting state.

142. (Added) The apparatus of claim 141, where said transition metal oxide is comprised of a transition metal capable of exhibiting multivalent states.

143. (Added) The apparatus of claim 141, where said transition metal oxide is comprised of a Cu oxide.

144. (Added) An apparatus comprising:

a composition ~~including~~ a transition metal, a rare earth or rare earth-like element, an alkaline earth element, and oxygen, where said composition is a mixed transition metal oxide having a non-stoichiometric amount of oxygen therein and exhibiting a superconducting state at a temperature greater than 26°K,

a temperature controller maintaining said composition in said superconducting state at a temperature greater than 26°K, and

a current source passing an electrical current through said composition while said composition is in said superconducting state.

145. (Added) The method of claim 144, where said transition metal is copper.

146. (Added) A method, including the steps of:

a composition exhibiting a superconductive state at a temperature in excess of 26°K,

Sub E1

a temperature controller maintaining said composition at a temperature in excess of 26°K at which temperature said composition exhibits said superconductive state, and

a current source passing an electrical current through said composition while said composition is in said superconductive state.

147. (Added) The method of claim 146, where said composition is comprised of a metal oxide.

method

148. (Added) The metal of claim 146, where said composition is comprised of a transition metal oxide.

149. (Added) A superconductive apparatus for causing electric current flow in a superconductive state at a temperature in excess of 26°K, comprising:

Sub B1

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a layer-type perovskite-like crystal structure, the

composition having a superconductor transition temperature T_c of greater than 26°K;

(b) a temperature controller maintaining the superconductor element at a temperature above 26°K and below the superconductor transition temperature T_c of the superconductive composition; and

(c) causing an electric current to flow in the superconductor element.

D1 Cncld

150. (Added) The superconductive apparatus according to claim 149 in which the copper-oxide compound of the superconductive composition includes at least one rare-earth or rare-earth-like element and at least one alkaline-earth element. 112

Sub 3'

151. (Added) The superconductive apparatus according to claim 150 in which the rare-earth or rare-earth-like element is lanthanum.

152. (Added) The superconductive apparatus according to claim 150 in which the alkaline-earth element is barium.

153. (Added) The superconductive apparatus according to claim 149 in which the copper-oxide compound of the superconductive composition includes mixed valent copper ions.

154. (Added) The superconductive apparatus according to claim 153 in which the copper-oxide compound includes at least one element in a nonstoichiometric atomic proportion.

155. (Added) The superconductive apparatus according to claim

154 in which oxygen is present in the copper-oxide compound in a nonstoichiometric atomic proportion.

156. (Added) A superconductive apparatus for conducting an electric current essentially without resistive losses, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a layer-type perovskite-like crystal structure, the copper-oxide compound including at least one rare-earth or rare-earth-like element and at least one alkaline-earth element, the composition having a superconductive/resistive-transition defining a superconductive/resistive-transition temperature range between an upper limit defined by a transition-onset temperature T_c and a lower limit defined by an effectively-zero-bulk-resistivity intercept temperature $T_{\rho=0}$, the transition-onset temperature T_c being greater than 26°K;

(b) a temperature controller maintaining the superconductor element at a temperature below the effectively-zero-bulk- resistivity intercept temperature $T_{\rho=0}$ of the superconductive composition; and

(c) a current source causing an electric current to flow in the superconductor element.

157. (Added) The superconductive apparatus according to claim 156 in which the rare-earth or rare-earth-like element is lanthanum.

158. (Added) The superconductive apparatus according to claim 156 in which the alkaline-earth element is barium.

159. (Added) The superconductive apparatus according to claim 156 in which the copper-oxide compound of the superconductive composition includes mixed valent copper ions.

160. (Added) The superconductive apparatus according to claim 159 in which the copper-oxide compound includes at least one element in a nonstoichiometric atomic proportion.

161. (Added) The superconductive apparatus according to claim 160 in which oxygen is present in the copper-oxide compound in a nonstoichiometric atomic proportion.

162. (Added) An apparatus including copper oxide having a phase therein which exhibits a superconducting state at a critical temperature in excess of 26°K;

a temperature controller maintaining the temperature of said material at a temperature less than said critical temperature to produce said superconducting state in said phase;

a current source passing an electrical supercurrent through said copper oxide while it is in said superconducting state;

said copper oxide includes at least one alkaline earth element selected from the group consisting of a Group II A element, a rare earth element and a Group III B element.

163. (Added) An apparatus comprising the steps of:

a composition including copper, oxygen and any element selected from the group consisting of a Group II A element, a rare earth element and a Group III B element, where said composition is a mixed copper oxide having a non-stoichiometric amount of oxygen therein and exhibiting a superconducting state at a temperature greater than 26°K;

a temperature controller maintaining said composition in said superconducting state at a temperature greater than 26°K; and

a current source passing an electrical current through said composition while said composition is in said superconducting state.

164. (Added) An apparatus comprising:

a composition exhibiting a superconductive state at a temperature in excess of 26°K;

a temperature controller maintaining said composition at a temperature in excess of 26°K at which temperature said composition exhibits said superconductive state;

a current source passing an electrical current through said composition while said composition is in said superconductive state; and

said composition including a copper oxide and an element selected from the group consisting of Group II A element, a rare earth element and a Group III B element.

165. (Added) An apparatus for causing electric-current flow in a superconductive state at a temperature in excess of 26°K, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a layer-type perovskite-like crystal structure, the composition having a superconductive transition temperature T_c of greater than 26°K, said superconductive composition includes at least one element selected from the group consisting of a Group II A element, a rare earth element; and a Group III B element;

(b) a temperature controller maintaining the superconductor element at a temperature above 26°K and below the superconductor transition temperature T_c of the superconductive composition; and

(c) a current source causing an electric current to flow in the superconductor element.

D1 cncld

Sub F1

166. (Added) An apparatus for conducting an electric current essentially without resistive losses, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a layer-type perovskite-like crystal structure, the copper-oxide compound including at least one element selected from the group consisting of a Group II A element, a rare earth element and a Group III B

element, the composition having a superconductive/resistive transition defining a superconductive/resistive-transition temperature range between an upper limit defined by a transition-onset temperature T_c and a lower limit defined by an effectively-zero-bulk-resistivity intercept temperature $T_{\rho=0}$, the transition-onset temperature T_c being greater than 26°K;

Sub 31

DP cnld

(b) a temperature controller maintaining the superconductor element at a temperature below the effectively-zero-bulk- resistivity intercept temperature $T_{\rho=0}$ of the superconductive composition; and

(c) a current source causing an electric current to flow in the superconductor element.

167. (Added) An apparatus comprising:

a copper oxide having a phase therein which exhibits a superconducting state at a critical temperature in excess of 26°K;

Sub C10

a temperature controller maintaining the temperature of said material at a temperature less than said critical temperature to produce said superconducting state in said phase;

a current source passing an electrical supercurrent through said copper oxide while it is in said superconducting state;

said copper oxide includes at least one element selected from the group consisting of a Group II A element and at least one element

selected from the group consisting of a rare earth element and a Group III B element.

168. (Added) An apparatus comprising:

a composition including copper, oxygen and an element selected from the group consisting of at least one Group II A element and at least one element selected from the group consisting of a rare earth element and a Group III B element, where said composition is a mixed copper oxide having a non-stoichiometric amount of oxygen therein and exhibiting a superconducting state at a temperature greater than 26°K;

a temperature controller maintaining said composition in said superconducting state at a temperature greater than 26°K; and

a current source passing an electrical current through said composition while said composition is in said superconducting state.

169. (Added) An apparatus comprising:

a composition exhibiting a superconductive state at a temperature in excess of 26°K;

a temperature controller maintaining said composition at a temperature in excess of 26°K at which temperature said composition exhibits said superconductive state;

a current source passing an electrical current through said composition while said composition is in said superconductive state; and

said composition including a copper oxide and at least one element selected from the group consisting of Group II A and at least one element selected from the group consisting of a rare earth element and a Group III B element.

170. (Added) A superconductive apparatus for causing electric-current flow in a superconductive state at a temperature in excess of 26°K, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a layer-type perovskite-like crystal structure, the composition having a superconductive transition temperature T_c of greater than 26°K, said superconductive composition includes at least one element selected from the group consisting of a Group II A element and at least one element selected from the group consisting of a rare earth element and a Group III B element;

(b) a temperature controller maintaining the superconductor element at a temperature above 26°K and below the superconductor transition temperature T_c of the superconductive composition; and

(c) a current source causing an electric current to flow in the superconductor element.

171. (Added) A superconductive apparatus for conducting an electric current essentially without resistive losses, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a layer-type perovskite-like crystal structure, the copper-oxide compound including at least one element selected from the group consisting of a Group II A element and at least one element selected from the group consisting of a rare earth element and a Group III B element, the composition having a superconductive/resistive transition defining a superconductive-resistive-transition temperature range between an upper limit defined by a transition-onset temperature T_c and a lower limit defined by an effectively-zero-bulk-resistivity intercept temperature $T_{p=0}$, the transition-onset temperature T_c being greater than 26°K;

(b) a temperature controller maintaining the superconductor element at a temperature below the effectively-zero-bulk- resistivity intercept temperature $T_{p=0}$ of the superconductive composition; and

(c) a current source causing an electric current to flow in the superconductor element.

172. (Added) An apparatus comprising:

a transition metal oxide having a phase therein which exhibits a superconducting state at a critical temperature in excess of 26°K;

a temperature controller maintaining the temperature of said material at a temperature less than said critical temperature to produce said superconducting state in said phase;

a current source passing an electrical supercurrent through said copper oxide while it is in said superconducting state;

Sub F1

said transitional metal oxide includes at least one element selected from the group consisting of a Group II A element and at least one element selected from the group consisting of a rare earth element and a Group III B element.

D1 cont'd

173. (Added) An apparatus comprising:

a composition including a transition metal, oxygen and an element selected from the group consisting of at least one Group II A element and at least one element selected from the group consisting of a rare earth element and a Group III B element, where said composition is a mixed transitional metal oxide formed from said transition metal and said oxygen, said mixed transition metal oxide having a non-stoichiometric amount of oxygen therein and exhibiting a superconducting state at a temperature greater than 26°K;

Sub E1

a temperature controller maintaining said composition in said superconducting state at a temperature greater than 26°K; and

a current source passing an electrical current through said composition while said composition is in said superconducting state.

174. (Added) A method including the steps of:

forming a composition exhibiting a superconductive state at a temperature in excess of 26°K;

a temperature controller maintaining said composition at a temperature in excess of 26°K at which temperature said composition exhibits said superconductive state;

a current source passing an electrical current through said composition while said composition is in said superconductive state; and

said composition including a transitional metal oxide and at least one element selected from the group consisting of Group II A element and at least one element selected from the group consisting of a rare earth element and a Group III B element.

175. (Added) A superconductive apparatus for causing electric-current flow in a superconductive state at a temperature in excess of 26°K, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a transition metal oxide compound having a layer-type perovskite-like crystal structure, the composition having a superconductive transition temperature T_c of greater than 26°K, said superconductive composition includes at least one element selected from the group consisting of a Group II A element and at least one element selected from the group consisting of a rare earth element and a Group III B element;

(b) a temperature controller maintaining the superconductor element at a temperature above 26°K and below the superconductor transition T_c of the superconductive composition; and

(c) a current source causing an electric current to flow in the superconductor element.

176. (Added) A superconductive apparatus for conducting an electric current essentially without resistive losses, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a transition-metal-oxide compound having a layer-type perovskite-like crystal structure, the transition-metal-oxide compound including at least one element selected from the group consisting of a Group II A element and at least one element selected from the group consisting of a rare earth element and a Group III B element, the composition having a superconductive/resistive transition defining a superconductive/resistive-transition temperature range between an upper limit defined by a transition-onset temperature T_c and a lower limit defined by an effectively-zero-bulk-resistivity intercept temperature $T_{p=0}$, the transition-onset temperature T_c being greater than 26°K;

(b) a temperature controller maintaining the superconductor element at a temperature below the effectively-zero-bulk- resistivity intercept temperature $T_{p=0}$ of the superconductive composition; and

(c) a current source causing an electric current to flow in the superconductor element.

177. (Added) An apparatus comprising:

a copper oxide having a phase therein which exhibits a superconducting state at a critical temperature in excess of 26°K;

a temperature controller maintaining the temperature of said material at a temperature less than said critical temperature to produce said superconducting state in said phase;

a current source passing an electrical supercurrent through said copper oxide while it is in said superconducting state;

said copper oxide includes at least one element selected from group consisting of a Group II A element, at least one element selected from the group consisting of a rare earth element and at least one element selected from the group consisting of a Group III B element.

112 clarify what is required by wording

178. (Added) An apparatus comprising:

a composition including copper, oxygen and an element selected from the group consisting of at least one Group II A element and at least one element selected from the group consisting of a rare earth element at least one element selected from the group consisting of a Group III B element, where said composition is a mixed copper oxide having a non-stoichiometric amount of oxygen therein and exhibiting a superconducting state at a temperature greater than 26°K;

a temperature controller maintaining said composition in said superconducting state at a temperature greater than 26°K; and

a current source passing an electrical current through said composition while said composition is in said superconducting state.

179. (Added) A structure comprising:

a composition exhibiting a superconductive state at a temperature in excess of 26°K;

a temperature controller maintaining said composition at a temperature in excess of 26°K at which temperature said composition exhibits said superconductive state;

a current source passing an electrical current through said composition while said composition is in said superconductive state; and

said composition including a copper oxide and at least one element selected from the group consisting of Group II A element, at least one element selected from the group consisting of a rare earth element and at least one element selected from the group consisting of a Group III B element. 1,2 clerical marks

180. (Added) A superconductive apparatus for causing electric-current flow in a superconductive state at a temperature in excess of 26°K, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a layer-type perovskite-like crystal structure, the composition having a superconductive transition temperature T_c of greater than 26°K, said superconductive composition includes at least one element selected from the group consisting of a Group II A element, at least one element selected from the group consisting of a rare earth element and at least one element selected from the group consisting of a Group III B element; clarify

(b) a temperature controller maintaining the superconductor element at a temperature above 26°K and below the superconductor transition temperature T_c of the superconductive composition; and

(c) a current source causing an electric current to flow in the superconductor element.

181. (Added) A superconductive apparatus for conducting an electric current essentially without resistive losses, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a layer-type perovskite-like crystal structure, the copper-oxide compound including at least one element selected from the group consisting of a group II A element, at least one element selected from the group consisting of a rare earth element and at least one clarify

element selected from the group consisting of a Group III B element, the composition having a superconductive-resistive transition defining a superconductive/resistive-transition temperature range between an upper limit defined by a transition-onset temperature T_c and a lower limit defined by an effectively-zero-bulk-resistivity intercept temperature $T_{p=0}$, the transition-onset temperature T_c being greater than 26°K;

(b) a temperature controller maintaining the superconductor element at a temperature below the effectively-zero-bulk-resistivity intercept temperature $T_{p=0}$ of the superconductive composition; and

(c) a current source causing an electric current to flow in the superconductor element.

182. (Added) An apparatus comprising providing a composition having a transition temperature greater than 26°K, the composition including a rare earth or alkaline earth element, a transition metal element capable of exhibiting multivalent states and oxygen, including at least one phase that exhibits superconductivity at temperature in excess of 26°K, a temperature controller maintaining said composition at said temperature to exhibit said superconductivity and a current source passing an electrical superconducting current through said composition with said phrase exhibiting said superconductivity.

183. (Added) An apparatus comprising providing a superconducting transition metal oxide having a superconductive onset temperature greater than 26°K, a temperature controller maintaining said

superconducting transition metal oxide at a temperature less than said superconducting onset temperature and a current source flowing a superconducting current therein.

184. (Added) An apparatus comprising a superconducting copper oxide having a superconductive onset temperature greater than 26°K, a temperature controller maintaining said superconducting copper oxide at a temperature less than said superconducting onset temperature and a current source flowing a superconducting current in said superconducting oxide.

185. (Added) An apparatus comprising a superconducting oxide composition having a superconductive onset temperature greater than 26°K, a temperature controller maintaining said superconducting copper oxide at a temperature less than said superconducting onset temperature and a current source flowing a superconducting current therein, said composition comprising at least one each of rare earth, an alkaline earth, and copper.

186. (Added) An apparatus comprising a superconducting oxide composition having a superconductive onset temperature greater than 26°K, a temperature controller maintaining said superconducting copper oxide at a temperature less than said superconducting onset temperature and a current source flowing a superconducting electrical current therein, said composition comprising at least one each of a Group III B element, an alkaline earth, and copper.

187. (Added) An apparatus comprising flowing a superconducting electrical current in a transition metal oxide having a T_c greater than 26°K and maintaining said transition metal oxide at a temperature less than said T_c.

188. (Added) An apparatus comprising a current source flowing a superconducting current in a copper oxide having a T_c greater than 26°K and a temperature controller maintaining said copper oxide at a temperature less than said T_c.

112

189. (Added) An apparatus comprising the steps of:

FIX

a composition of the formula Ba_xLa_{x-5}, Cu50Y, wherein x is from about 0.75 to about 1 and y is the oxygen deficiency resulting from annealing said composition at temperatures from about 540°C to about 950°C and for times of about 15 minutes to about 12 hours, said composition having a metal oxide phase which exhibits a superconducting state at a critical temperature in excess of 26°K;

D1 cncld

a temperature controller maintaining the temperature of said composition at a temperature less than said critical temperature to induce said superconducting state in said metal oxide phase; and

Sub J'

a current source passing an electrical current through said composition while said metal oxide phase is in said superconducting state.

190. (Added) An apparatus comprising a current source flowing a superconducting electrical current in a composition of matter having a T_c greater than 26°K, said composition comprising at least one each of a Group III B element, an alkaline earth, and copper oxide and a temperature controller maintaining said composition of matter at a temperature less than T_c.

191. (Added) An apparatus comprising a current source flowing a superconducting electrical current in a composition of matter having a T_c greater than 26°K, said composition comprising at least one each of a rare earth, alkaline earth, and copper oxide and a temperature controller maintaining said composition of matter at a temperature less than said T_c.

192. (Added) An apparatus comprising a current source flowing a superconducting electrical current in a composition of matter having a T_c greater than 26°K, said composition comprising at least one each of a rare earth, and copper oxide and a temperature controller maintaining said composition of matter at a temperature less than said T_c.

193. (Added) An apparatus comprising a current source flowing a superconducting electrical current in a composition of matter having a T_c greater than 26°K carrying, said composition comprising at least one each of a Group III B element, and copper oxide and a temperature controller maintaining said composition of matter at a temperature less than said T_c.

194. (Added) An apparatus comprising a current source flowing a superconducting electrical current in a transition metal oxide comprising a T_c>26°K and a temperature controller maintaining said transition metal oxide at a temperature less than said T_c.

195. (Added) An apparatus comprising a current source flowing a superconducting electrical current in a copper oxide composition of matter comprising a T_c>26°K and a temperature controller maintaining said copper oxide composition of matter at a temperature less than said T_c.

196. (Added) An apparatus comprising:

a composition including a transition metal, a Group III B element, an alkaline earth element, and oxygen, where said composition is a mixed transition metal oxide having a non-stoichiometric amount of oxygen therein and exhibiting a superconducting state at a temperature greater than 26°K,

a temperature controller maintaining said composition in said superconducting state at a temperature greater than 26°K, and

a current source passing an electrical current through said composition while said composition is in said superconducting state.

197. (Added) The apparatus of claim 196, where said transition metal is copper.

Sub B'

198. (Added) A superconductive apparatus for causing electric current flow in a superconductive state at a temperature in excess of 26°K, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a substantially layered perovskite crystal structure, the composition having a superconductor transition temperature T_c of greater than 26°K;

(b) a temperature controller maintaining the superconductor element at a temperature above 26°K and below the superconductor transition temperature T_c of the superconductive composition; and

(c) a current source causing an electric current to flow in the superconductor element.

112

199. (Added) The superconductive apparatus according to claim 198 in which the copper-oxide compound of the superconductive composition includes at least one element selected from the group consisting of a rare-earth element and a Group III B element and at least one alkaline-earth element.

200. (Added) The superconductive apparatus according to claim 199 in which the rare-earth or rare-earth-like element is lanthanum.

201. (Added) The superconductive apparatus according to claim 199 in which the alkaline-earth element is barium.

202. (Added) The superconductive apparatus according to claim 198 in which the copper-oxide compound of the superconductive composition includes mixed valent copper ions.

203. (Added) The superconductive apparatus according to claim 202 in which the copper-oxide compound includes at least one element in a nonstoichiometric atomic proportion.

204. (Added) The superconductive apparatus according to claim 203 in which oxygen is present in the copper-oxide compound in a nonstoichiometric atomic proportion.

205. (Added) A superconductive apparatus for conducting an electric current essentially without resistive losses, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a substantially layered perovskite crystal structure, the copper-oxide compound including at least one element selected from the group consisting of a rare-earth element and a Group III B element and at least one alkaline-earth element, the composition having a superconductive/resistive transition defining a superconductive/resistive-transition temperature range between an upper limit defined by a transition-onset temperature T_c and a lower limit defined by an effectively-zero-bulk-resistivity intercept temperature $T_{\rho=0}$, the transition-onset temperature T_c being greater than 26°K; clarify

(b) a temperature controller maintaining the superconductor element at a temperature below the effectively-zero-bulk-resistivity intercept temperature $T_{\rho=0}$ of the superconductive composition; and

(c) a current source causing an electric current to flow in the superconductor element.

206. (Added) The superconductive apparatus according to claim 205 in which said at least one element is lanthanum.

207. (Added) The superconductive apparatus according to claim 205 in which the alkaline-earth element is barium.

208. (Added) The superconductive apparatus according to claim 205 in which the copper-oxide compound of the superconductive composition includes mixed valent copper ions.

209. (Added) The superconductive apparatus according to claim 208 in which the copper-oxide compound includes at least one element in a nonstoichiometric atomic proportion.

210. (Added) The superconductive apparatus according to claim 209 in which oxygen is present in the copper-oxide compound in a nonstoichiometric atomic proportion.

211. (Added) A superconductive apparatus for causing electric-current flow in a superconductive state at a temperature in excess of 26°K, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a substantially layered perovskite crystal structure, the composition having a superconductive transition temperature T_c of greater than 26°K, said superconductive composition includes at least one element selected from the group consisting of a Group II A element, a rare earth element; and a Group III B element;

(b) a temperature controller maintaining the superconductor element at a temperature above 26°K and below the superconductor transition temperature T_c of the superconductive composition; and

(c) a current source causing an electric current to flow in the superconductor element.

212. (Added) A superconductive apparatus for conducting an electric current essentially without resistive losses, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a substantially layered perovskite crystal structure, the copper-oxide compound including at least one element selected from the group consisting of a Group II A element, a rare earth element and a Group III B element, the composition having a superconductive/resistive transition defining a superconductive/resistive-transition temperature range between an upper limit defined by a transition-onset temperature T_c and a lower limit defined by an effectively-zero-bulk-resistivity intercept temperature $T_{\rho=0}$, the transition-onset temperature T_c being greater than 26°K;

(b) a temperature controller maintaining the superconductor element at a temperature below the effectively-zero-bulk-resistivity intercept temperature $T_{\rho=0}$ of the superconductive composition; and

(c) a current source causing an electric current to flow in the superconductor element.

213. (Added) A superconductive apparatus for causing electric-current flow in a superconductive state at a temperature in excess of 26°K, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a substantially layered perovskite crystal structure, the composition having a superconductive transition temperature T_c of greater than 26°K, said superconductive composition includes at least one element selected from the group consisting of a Group II A element and at least one element selected from the group consisting of a rare earth element and a Group III B element;

(b) a temperature controller maintaining the superconductor element at a temperature above 26°K and below the superconductor transition temperature T_c of the superconductive composition; and

(c) a current source causing an electric current to flow in the superconductor element.

214. (Added) A superconductive apparatus for conducting an electric current essentially without resistive losses, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a copper-oxide compound having a substantially layered perovskite crystal structure, the copper-oxide compound including at least one element selected from the group consisting of a Group II A element and at least one element selected from the group consisting of a rare earth element and a Group III B element, the composition having a

superconductive/resistive transition defining a superconductive-resistive-transition temperature range between an upper limit defined by a transition-onset temperature T_c and a lower limit defined by an effectively-zero-bulk-resistivity intercept temperature $T_{p=0}$, the transition-onset temperature T_c being greater than 26°K;

(b) a temperature controller maintaining the superconductor element at a temperature below the effectively-zero-bulk-resistivity intercept temperature $T_{p=0}$ of the superconductive composition; and

(c) a current source causing an electric current to flow in the superconductor element.

215. (Added) A superconductive apparatus for causing electric-current flow in a superconductive state at a temperature in excess of 26°K, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a transition metal oxide compound having a substantially layered perovskite crystal structure, the composition having a superconductive transition temperature T_c of greater than 26°K, said superconductive composition includes at least one element selected from the group consisting of a Group II A element and at least one element selected from the group consisting of a rare earth element and a Group III B element;

(b) a temperature controller maintaining the superconductor element at a temperature above 26°K and below the superconductor transition T_c of the superconductive composition; and

(c) a current source causing an electric current to flow in the superconductor element.

216. (Added) A superconductive apparatus for conducting an electric current essentially without resistive losses, comprising:

(a) a superconductor element made of a superconductive composition, the superconductive composition consisting essentially of a transition metal-oxide compound having a substantially layered perovskite crystal structure, the transition metal-oxide compound including at least one element selected from the group consisting of a Group II A element and at least one element selected from the group consisting of a rare earth element and a Group III B element, the composition having a superconductive/resistive transition defining a superconductive/resistive-transition temperature range between an upper limit defined by a transition-onset temperature T_c and a lower limit defined by an effectively-zero-bulk-resistivity intercept temperature $T_{p=0}$, the transition-onset temperature T_c being greater than 26°K;

(b) a temperature controller maintaining the superconductor element at a temperature below the effectively-zero-bulk-resistivity intercept temperature $T_{p=0}$ of the superconductive composition; and

(c) a current source causing an electric current to flow in the superconductor element.

217. (Added) An apparatus according to claim 182 wherein said composition comprises a substantially layered perovskite crystal structure.

218. (Added) An apparatus according to claim 183 wherein said superconducting transistor metal oxide comprises a substantially layered perovskite crystal structure.

219. (Added) An apparatus according to claim 184 wherein said superconducting copper oxide comprises a substantially layered perovskite crystal structure.

220. (Added) An apparatus according to claim 185 wherein said superconducting oxide composition comprises a substantially layered perovskite crystal structure.

221. (Added) An apparatus according to claim 186 wherein said superconducting oxide composition comprises a substantially layered perovskite crystal structure.

222. (Added) An apparatus according to claim 187 wherein said transistor metal oxide comprises a substantially layered perovskite crystal structure.

223. (Added) An apparatus according to claim 188 wherein said copper oxide comprises a substantially layered perovskite crystal structure.

224. (Added) An apparatus according to claim 189 wherein said composition comprises a substantially layered perovskite crystal structure.

225. (Added) An apparatus according to claim 190 wherein said composition of matter comprises a substantially layered perovskite crystal structure.

226. (Added) An apparatus according to claim 191 wherein said composition of matter comprises substantially layered perovskite crystal structure.

227. (Added) An apparatus according to claim 192 wherein said composition of matter comprises a substantially layered perovskite crystal structure.

228. (Added) An apparatus according to claim 193 wherein said composition of matter comprises substantially layered perovskite crystal structure.

229. (Added) An apparatus according to claim 194 wherein said transistor metal oxide comprises substantially layered perovskite crystal structure.

230. (Added) An apparatus according to claim 195 wherein said copper oxide composition comprises substantially layered perovskite crystal structure.

REMARKS

Reconsideration is respectfully requested in view of any changes to the claims and the remarks herein. Please contact the undersigned to conduct a telephone interview in accordance with